



# WATER QUALITY REPORT

2014 CONSUMER CONFIDENCE REPORT

CITY OF MIDLAND, TEXAS  
**UTILITIES DEPARTMENT**



## YEAR IN REVIEW

The Texas Commission of Environmental Quality removed the city of Midland from its Drought Watch List in April 2015, after verifying that Midland has secured long-term water sources for drinking water use. Midland had been on the list since 2011, and was only the second public water system to be removed from the agency's watch list.

In May 2015, the City of Midland reinforced its commitment to a two-day-per-week outdoor watering schedule for households in Midland, but expanded hours to allow residents to irrigate plants and lawns anytime on their designated watering days. The new hours have been established by City officials and conservationists to best maximize water use by allowing morning hours for irrigation.

The City of Midland would like to remind citizens to utilize mulch and encourage a deep, drought-resistant root zone for their plants and trees by watering deeply and infrequently. Other suggestions include the use of drip irrigation and rotary spray nozzles to deliver more water to the plants and lose less to heat and wind.

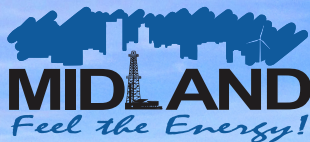
The City of Midland thanks residents for their conservation efforts and continues to encourage the use of drought-tolerant plants and conservation-minded irrigation techniques.

## OUTDOOR WATERING

The current outdoor watering schedule allows residents and businesses in the City of Midland to water twice per week.

**Even numbered addresses** may water outdoors on Saturdays and Wednesdays. **Odd numbered addresses** may water outdoors on Fridays and Tuesdays.

Learn more about our current watering restrictions at [midlandtexas.gov/401/Outdoor-Watering](http://midlandtexas.gov/401/Outdoor-Watering).



## WHERE DO WE GET OUR DRINKING WATER?

Midland's drinking water comes from the Ogallala and Edwards-Trinity Plateau aquifers in Martin, Andrews, Loving and Winkler Counties. Also, surface water sources owned and operated by the Colorado River Municipal Water District (CRMWD); lakes J.B. Thomas, O.H. Ivie, Moss Creek and E.V. Spence.

A Source Water Susceptibility Assessment for your drinking water sources(s) is currently being updated by the Texas Commission on Environmental Quality. This information describes the susceptibility and types of constituents that may come into contact with your drinking water source based on human activities and natural conditions. The information contained in the assessment allows us to focus source water protection strategies. For more information about your sources of water, please refer to the Source Water Assessment Viewer available at [tceq.texas.gov/gis/swaview](http://tceq.texas.gov/gis/swaview). Further details about sources and source water assessments are available in Drinking Water Watch at [dww.tceq.texas.gov/DWW/](http://dww.tceq.texas.gov/DWW/).



# CONSERVATION AND LANDSCAPING

Water conservation should be a vital concern for every Texan. Water is a limited and fragile resource. Water conservation in the landscape does not have to mean planting a harsh cactus and rock garden. It means common sense landscaping and following the principles of water conservation to ensure continued prosperity for the residents and businesses of Midland.

## HOW CAN I WATER MORE EFFECTIVELY?

Of the tremendous amounts of water applied to lawns and gardens, much of it is never absorbed by the plants and put to use. Some water is lost to runoff by being applied too rapidly, and some water evaporates from exposed, unmulched soil. The greatest waste of water is applying too much too often.



## HERE ARE A FEW WAYS YOU CAN SAVE WATER AND MONEY THROUGH PROPER WATERING TECHNIQUES:

**LAWNS:** The key to watering lawns is to apply water deeply yet infrequently. Watering only when needed and watering thoroughly produces a deep-rooted lawn which is more water efficient and drought-enduring. To know when to water the lawn, simply observe the grass. Wilting and discoloration are signs of water stress.

**TREES AND SHRUBS:** All trees and shrubs need more frequent watering from planting time until becoming well-rooted, which may take two growing seasons. Once established, plants can then be weaned to tolerate less frequent watering. Proper weaning develops deep roots and makes the plants more drought-enduring. In the absence of rain, most trees and shrubs benefit from infrequent and deep watering.



**REMEMBER:** the feeding root system of a tree or shrub is located within the top 12 inches of the soil and at the "drip line" of the plant. The drip line is the area directly below the outermost reaches of the branches. Apply water and fertilizer just inside and a little beyond the drip line, not at the trunk. Simply lay a slowly running hose on the ground and move it around the drip line as each area becomes saturated to a depth of 8 to 10 inches.

**IRRIGATION SYSTEMS:** The goal of any irrigation system is to give plants a sufficient amount of water without waste. Both sprinklers and drip irrigation can be incorporated to achieve water conservation in your landscape. By zoning an irrigation system, grass areas can be watered separately and more frequently than groundcovers, shrubs and trees.

## OTHER WAYS TO CONSERVE:

**MULCHING:** Mulch is a layer of nonliving material covering the soil surface around plants. A good mulch conserves water by significantly reducing moisture evaporation from the soil. Mulch also reduces weed populations, prevents soil compaction and keeps soil temperatures more moderate.

Proper Mowing and Fertilizing: Mowing grass at the proper height conserves water. Mow St. Augustine grass and buffalo grass at 3 inches; for Bermuda grass, mow at 1 inch. Applying fertilizer to the lawn at the proper time and in the proper amount can save time, effort and money through reduced mowing and watering. Fertilize the lawn once in the spring and again in the fall to produce a beautiful turf without excess growth, which demands frequent watering. Use a slow-release form of nitrogen in the spring application and a quick-release form in the fall. Apply only 1 pound of actual nitrogen fertilizer per 1,000 square feet of lawn at one time. By using this fertilizer schedule, no other fertilizer is needed to maintain most shrubs and trees in the lawn area.

Be Aware: Other ways you can increase efficiency of watering are periodic checks of the irrigation system, properly timed insect and disease control and elimination of water-demanding plants.

### PLANNING YOUR LANDSCAPE

For ideas of plants, grasses, and other landscaping techniques that will conserve water, please visit your local nursery or log on to [aggie-horticulture.tamu.edu/earthkind/](http://aggie-horticulture.tamu.edu/earthkind/).

**SPRINKLERS:** The two most common types of sprinkler irrigation systems are the hose-end sprinkler and the permanent underground system. Even though a permanent sprinkler system can be more water efficient than a hose-end sprinkler, both systems require little maintenance and apply large volumes of water in a short time. If you have a permanent sprinkler system, make sure the sprinkler heads are adjusted properly to avoid watering sidewalks and driveways. Water between late evening and mid-morning with sprinklers to avoid excessive waste through evaporation.

**DRIP IRRIGATION:** Drip irrigation offers increased watering efficiency and plant performance when compared to sprinkler irrigation. In areas of the state with poor water quality (i.e., high salt content), drip irrigation also allows safer use of "salty water" in the landscape and garden. Drip irrigation slowly applies water to soil. The water flows under low pressure through emitters, bubblers or spray heads placed at each plant. Water applied by drip irrigation has little chance of waste through evaporation or runoff. Seeking professional irrigation advice and experimenting with available drip irrigation products in small sections of the landscape are the best ways to become familiar with the many benefits of this watering technique.



# 2014 MIDLAND WATER QUALITY REPORT

## DRINKING WATER QUALITY REPORT

PWSID: TX1650001

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

For more information regarding this report, contact Holly McGrath Rosas, Assistant Director of Utilities, at 432-685-7260.

## SPECIAL NOTICE

Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [epa.gov/safewater/lead](http://epa.gov/safewater/lead).



## PUBLIC PARTICIPATION OPPORTUNITIES

The Midland City Council meets on the 2nd and 4th Tuesdays of each month at City Hall, 300 N. Loraine Street, at 10:00 a.m. The Council agenda is posted for public notice at least 72 hours prior to the meetings. To find out whether water issues will be considered at a particular City Council meeting, please call the Utilities Department at (432) 685-7260.

## ABOUT THE FOLLOWING PAGES

The pages that follow list all of the federally regulated or monitored contaminants which have been found in your drinking water. The U.S. EPA requires water systems to test for up to 97 contaminants. For a complete list of all contaminants tested and the analytical results, go to [dww.tceq.texas.gov/DWW/](http://dww.tceq.texas.gov/DWW/).

## EN ESPAÑOL

Este reporte incluye información importante sobre el agua potable. Si tiene preguntas o discusiones sobre este reporte en español, favor de llamar al tel. (432) 685-7100 par hablar con una persona bilingue en español.



## SECONDARY CONSTITUENTS

Many constituents (such as calcium, sodium, or iron) which are often found in drinking water, can cause taste, color, and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. These constituents are not causes for health concern. Therefore, secondaries are not required to be reported in this document but they may greatly affect the appearance and taste of your water.

## ARSENIC

The maximum contaminant level (MCL) for arsenic decreased from 0.05 mg/l (50ppb) to 0.010 mg/l (10ppb) effective January 23, 2006. If we violate, you will be notified. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.



# 2014 CCR REPORT DATA



## Inorganic Contaminants

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	Violation	MCLG	Unit of Measure	MCL	Source of Contaminant
Arsenic								
2013	EP001	9.02	5.57-9.02			ppb	10	Erosion of natural deposits; Runoff from orchards; runoff from glass and electronics production wastes.
	EP003	31.0	22.9-31.0					
2014	EP001	9.04	4.7-9.04	NO				
	EP003	28.9	22.4-28.9	YES				
Barium								
2013	EP001	0.151	0.15-0.13			ppm	10	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
	EP003	0.0247	0.03-0.03					
2014	EP001	0.170	0.17-0.17	NO				
	EP003	NR	NR	NO				
Fluoride								
2013	EP001	1.46	1.41-1.46			ppm	10	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.
	EP003	4.45	4.26-4.45					
2014	EP001	1.01	1.01-1.01	NO				
	EP003	4.48	4.21-4.48	YES				
Nitrate								
2013	EP001	0.758	0.75-0.75			ppm	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits.
	EP003	2.14	2.12-14					
2014	EP001	0.727	0.727-0.727	NO				
	EP003	2.11	2.11-2.11	NO				
Nitrate Advisory - Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.								
Selenium								
2013	EP001	23.6	16.0-23.6			ppb	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
	EP003	70.1	47.0-70.1					
2014	EP001	4.5	4.5-4.5	NO				
	EP003	28.9	31.8-96.1	NO				

## Radioactive Contaminants

Year	Contaminant	Highest Level Detected	Range of Levels Detected	Violation	MCLG	Unit of Measure	MCL	Source of Contaminant
1/26/2011	Beta/photon emitters	11	11 - 11	NO	0	pCi/L	4	Decay of natural and man-made deposits.
1/26/2011	Gross alpha excluding radon and uranium	2.3	2.3 - 2.3	NO	0	pCi/L	15	Erosion of natural deposits.

# 2014 CCR REPORT DATA

## Volatile Organic Compounds - No regulated contaminants were found above detection limits

Collection Date	Contaminant	Highest Level Detected	Range of Levels Detected	Violation	MCLG	Unit of Measure	MCL	Source of Contaminant
<b>Disinfection Byproducts</b>								
2013	Haloacetic Acids (HAA5)	16.6	11.7-16.6	NO	No goal for the total	ppb	60	By-product of drinking water chlorination.
2014		33.4	16.0-33.4					
2013	Total Trihalomethanes (TThm)	107.3	70.4-107.3	YES				
2014		101.9	61.0-101.9					

Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

Date Sampled	Contaminant	Highest Level Detected	Action Level (AL)	90th Percentile	# Sites over AL	Unit of Measure	Violations	Likely Source of Contaminant
<b>Lead &amp; Copper</b>								
7-21-2012	Copper	1.3 mg/l	1.3	.342	0	mg/L	NO	Corrosion of household plumbing systems; Leaching from wood preservatives; Erosion of natural deposits
7-21-2012	Lead	0.0	0.015	.00432	0	mg/L	NO	Corrosion of household plumbing systems; Erosion of natural deposits;

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Highest no. of Positive	Fecal Coliform or E. Coli Maximum Contaminant Level	Total No. of Positive E. Coli or Fecal Coliform Samples	Violations	Likely Source of Contamination
<b>Coliform Bacteria</b>						
2014	5% of monthly samples are positive.	0.7% of samples were positive	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	0	NO	Naturally present in the environment

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
<b>Turbidity</b>				
Highest single measurement	1 NTU 2014 1 NTU	0.50 NTU	NO	Soil Runoff
Lowest monthly % meeting limit	0.3 NTU 2014	100% 95.5% (as per Ray)	NO	Soil Runoff

Year	Disinfectant	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Unit of Measure	Source of Chemical
<b>Residual Disinfectant Level</b>								
2014	Chloramines	2.43	0.0	7.5	4.0	<4.0	ppm	Disinfectant used to control microbes.

## Our Drinking Water is Regulated

by the Texas Commission on Environmental Quality (TCEQ) and they have determined that certain water quality issues exist which prevent our water from meeting all of the requirements as stated in the Federal Drinking Water Standards. Each issue is listed in this report as a violation and we are working closely with the TCEQ to achieve solutions.



# VIOLATIONS

Violation Type	Health Effects	Duration	Explanation	Steps to Correct
ENTRY POINT 003: MCL VIOLATION- FLUORIDE	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.	01/1/2014 to 03/31/2014	The Paul Davis well field has elevated fluoride levels. This source is currently no more than 25% of the City supply. These readings were taken of raw well water at the well field. Residents of town do not get this water but the blend which meets regulatory	The City has redesigned the entry points to our system to insure that the water from the Paul Davis well field is blended with treated surface water to insure the levels of fluoride are always below regulatory limits. We are currently installing point of use devices on the 5 customers who only receive this water to eliminate this violation.
ENTRY POINT 003: MCL VIOLATION- ARSENIC	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.	01/01/2014 to 01/31/2012	The Paul Davis well field has elevated arsenic levels. This source is currently no more than 25% of the City supply. These readings were taken of raw well water at the well field. Residents of town do not get this water but the blend which meets regulatory standards.	The City has redesigned the entry points to our system to insure that the water from the Paul Davis well field is blended with treated surface water to insure the levels of arsenic are always below regulatory limits. We are currently installing point of use devices on the 5 customers who only receive this water to eliminate this violation.
ENTRY POINT 003: MCL VIOLATION- SELENIUM	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.	01/01/2012 to 03/31/2011	The Paul Davis well field has elevated selenium levels. This source is currently no more than 25% of the City supply. These readings were taken of raw well water at the well field. Residents of town do not get this water but the blend which meets regulatory	The City has redesigned the entry points to our system to insure that the water from the Paul Davis well field is blended with treated surface water to insure the levels of selenium are always below regulatory limits. We are currently completing a pilot study to install point of use devices on the 5 customers who only receive this water to eliminate this violation.
ENTRY POINT 001: MCL VIOLATION TOTAL TRICHALOMETHANES (TTHM)	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of getting cancer.	01/01/2012 to 03/31/2012	Trihalomethanes are a group of volatile organic compounds that are formed when chlorine, added to the water during the treatment process for disinfection, reacts with naturally-occurring organic matter in the water. The high total trihalomethane levels are a direct result of the drought. We are not moving enough water through the system to insure fresh water at all locations.	The City temporarily changed disinfectants last summer from chloramines to chlorine in an attempt to reduce the levels of these compounds. Indications are that this effort was successful and we have seen the total trihalomethane levels fall. The numbers in this report are annual averages which include the higher numbers of the summer of 2012.

## DEFINITIONS AND ABBREVIATIONS

### Maximum Contaminant Level (MCL)

The highest permissible level of a contaminant in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

### Maximum Contaminant Level Goal (MCLG)

The level of a contaminant in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

### Maximum Residual Disinfectant Level (MRDL)

The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

### Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.

### Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

### Action Level (AL)

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Avg** – Regulatory compliance with some MCLs are based on running annual average of Monthly samples

**NTU** – Nephelometric Turbidity Units

**MFL** – million fibers per liter (a measure of asbestos)

**pCi/L** – picocuries per liter (a measure of radioactivity)

**ppm** – parts per million, milligrams per liter (mg/l), or one ounce in 7,350 gallons of water

**ppb** – parts per billion, micrograms per liter (µg/l), or one ounce in 7,350,000 gallons of water

**ppt** – parts per trillion, nanograms per liter, or one ounce in 7,350,000,000 gallons of water

**na** – not applicable



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